

ABSTRACT

A time division multiplexed wireless communication system using the DECT protocol with spread-spectrum modulation.

5 The wireless communication system comprises a spread-spectrum transmitter and receiver. The spread spectrum transmitter transmits using an M-ary spread spectrum transmission technique, sending a predefined chip code (symbol code) for each data symbol. The predefined chip codes used are relatively short, so that spread spectrum synchronization is accomplished within about a single data symbol transmission time, well within the constraints of the DECT timing structure. The spread spectrum signal may be transmitted over a bandwidth of under 20 MHz (e.g., about 5 MHz) covering a plurality of DECT frequency channels, so as to be confined within, or overlapping with, the bandwidth of a DECT system, and so as to minimize interference with other users, if any, of the same frequency spectrum. A spread spectrum transmission in a DECT time slot may overlay one or more narrowband transmissions, or may overlay other spread spectrum transmissions. Code division multiplexing may also be used to allow multiple spread spectrum transmissions to be sent during a single DECT time slot.

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